

REMARKS/ARGUMENTS

Claims 1-92 were pending in the application. The Examiner allowed Claims 21-30, 32-39 and 57-58 and objected to Claims 3-20, 31, 41-56, 80-83, 85-87 and 92. The only claims rejected were Claims 1, 2 and 79 under § 103 citing Touma et al in view Lee et al; Claims 40, 84, 88, 90 and 91 under § 103 citing Touma et al in view Lee et al and further in view of Mack; and Claim 89 under § 102 as anticipated by Touma et al. The rejections are traversed.

The key rejections appear to be those citing Touma et al alone and further in view of Lee et al. The Examiner stated in pertinent part in rejecting Claim 1 at page 2 of his action:

Regarding claim 1, Touma et al. teaches all the limitations except using a basis coordinate system respectively associated with the reference vertices.... Touma et al. also teaches predicting offset vertices of the offset model or mesh for corresponding reference vertices of a reference model associated with the offset model in column 6 lines 40-50....

The Examiner made similar remarks regarding each of the other rejected independent claims under § 103. The Examiner made similar remarks in his § 102 rejection of Claim 89 also pertaining to Touma et al. Therefore Touma et al is the key reference in this regard.

It is respectfully submitted that in an important regard Touma et al does not meet the portion of Claim 1 which the Examiner asserts it does. Specifically in accordance with the invention, see paragraph 5 under Summary of the Invention:

Generally, the methodology uses an initial or reference model for selected frame [sic - amended here] of an animation sequence, and based on the reference model, predicts an the [sic - amended here] offset model in each of a number of subsequent frames. (Emphasis added.)

As pointed in paragraph 19 a typical model, for instance, is model 100 which is a head of a character. Paragraph 20 explains further what is referred to by a reference model here:

Fig. 2 illustrates a pose (or position) of the model at some reference time, and hence is referred to as the reference pose or reference model; by extension each of the control vertices 104 has a particular position at this reference time. The reference time is determined by the animator, and may be understood by analogy to correspond to a snapshot of the model at one particular time during the animation, typically the first frame. (Emphasis added.)

By first frame here is meant the first frame of a sequence or cycle of animation frames. As is well known a cycle is, for instance, only a portion of a scene in animation, for instance 100 or 200 frames involving a few seconds of animation.

It is further pointed out in paragraph 22:

An animation sequence may have any number of frames, depending on the length of the sequence, and for each such frame there is provided a geometry file for the model defining the pose of the model at the frame time. In the context of the present invention, one of these frames is selected as the reference frame. The model associated with such reference frames will be the reference geometry model. (Emphasis added.)

Hence, the recitation in each of the present independent claims of the term “reference model”, see for instance Claim 1, line 5.

As obviously understood by the Examiner, the goal of this particular approach is to enhance the compression ratio and/or fidelity at a particular ratio of compression. The reference model is used to predict the later positions of the various vertices of the model, from which the various offsets are determined thereby enhancing compression.

Touma et al does not disclose or even acknowledge the possibility of a “reference model”.

The Examiner in his rejection cited Touma et al column 1 lines 65-67, column 3 lines 58-63, column 6 lines 40-50, and column 11 lines 16-17. The Examiner specifically referred to the

reference model being in Touma at the bottom of page 2 of the action referring to Touma et al column 6 lines 40-50. However it is not believed that this portion of Touma et al or the other cited passages or any other passage of Touma et al refers to a “reference model” or equivalent. Column 6 beginning line 40 merely refers to “a method for compressing a mesh including a plurality of vertices having geometric coordinates, including arranging the vertices in a consecutive order, compressing the coordinates....” Apparently the point of Touma et al is to arrange the vertices of the mesh in a consecutive order as part of the compression procedure, see column 2 lines 12-14.

Thus there is no “reference model” in Touma et al. While perhaps there is implicitly a “model” in the sense of a character or figure which is being compressed, there is no selection by the animator of a “reference model” at the beginning of an animation sequence or cycle or elsewhere. In fact, Touma et al does not appear to deal with the possibility of animation or a frame sequence. Touma et al is more general about referring to computer graphics rather than animation, animation having its own peculiarities. As well known in the animation field and in movies and video generally images are organized by frame, typically 24 or 30 frames per second, which are shown as part of the finished film/video, and animators typically work on a frame-by-frame basis. This does not appear to be part of Touma et al in terms of the technical problem he solves, and is especially not mentioned as part of his solution which is broadly that of compression of a “mesh”.

Hence, it is respectfully submitted the Examiner was not correct in reading Touma et al on the “reference model” recited in Claim 1.

The other cited references which are Lee et al and Mack also do not appear to disclose or even suggest a “reference model”.

Clearly Claim 1 distinguishes over Touma et al, even in combination with Lee et al which the Examiner cites against Claim 1 as showing the basis coordinate system but which however has nothing to do with the reference model aspect.

Hence Claim 1 and all claims dependent thereon are allowable over Touma and Lee even in combination.

Each of the other independent rejected claims which are Claims 40, 79, 84, 88, 89, 90, and 91 also recite the “reference model” and were similarly rejected citing Touma et al, and are similarly allowable over Touma et al as are all claims dependent thereon.

Hence all previously pending claims are allowable.

Added Claims

Applicant hereby adds dependent claims, each identical and dependent upon one of the independent claims and reading on paragraph 20 and 22, to recite aspects of the “reference model”. These claims are perhaps in part redundant since the meaning of reference model it is believed is clear. However, they are submitted here for purposes of completeness in claiming. Since these are dependent claims they are allowable at least for the same reasons as is respectively each of the independent base claims.

Hence this application, with all pending Claims 1-101 pending, is allowable. No amendments are made to the previously pending claims, and the only claims added are dependent.

CONCLUSION

The Examiner is respectfully requested to withdraw all outstanding rejections and pass this application to issue with all claims allowed. If the Examiner wishes to telephone the undersigned, he is requested to do so at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this paper to Deposit Account No. 03-1952 referencing docket no. 59028-2001700.

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